ABSTRACT

A spin-pull blind insert tool utilizes a control system that generates a stop signal based on the relationship between the force values and the motion values derived from the action of the tool mandrel. The improved control system utilizes the shape of the force-deformation curve and not just a given pre-set force value or pull distance. Hence, the control system of the present invention does not require any set-up for changes in panel thickness unless the mandrel is also changed to install a different thread size. This control system develops a force-deformation curve as the fastener is being installed. The stop signal is generated when a pre-set deformation point has been exceeded and the shape of the force curve can be characterized by either of two types. For either type, an algorithm is followed which establishes an optimum stopping point for the installation tool regardless of the panel thickness into which the blind rivet is being installed.